SEQUENCE LISTING

<110> HIATT, ANDREW C.
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<120> J CHAIN POLYPEPTIDE TARGETING MOLECULE LINKED TO AN IMAGING AGENT

<130> EPI3003C

<140> 10/062,467
<141> 2002-02-05

<150> 08/782,480
<151> 1997-01-10

<150> 09/005,167
<151> 1998-01-09

<160> 93

<170> PatentIn Ver. 2.1

<210> 1
<211> 137
<212> PRT
<213> Homo sapiens

<400> 1

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  1               5                  10                  15

Arg Ile Thr Ser Arg Ile Ile Arg Ser Ser Glu Asp Pro Asn Glu Asp
             20                  25                  30

Ile Val Glu Arg Asn Ile Arg Ile Ile Val Pro Leu Asn Asn Arg Glu
         35                  40                  45

Asn Ile Ser Asp Pro Thr Ser Pro Leu Arg Thr Arg Pro Val Tyr His
     50                  55                  60

Leu Ser Asp Leu Cys Lys Lys Cys Asp Pro Thr Glu Val Glu Leu Asp
 65                  70                  75                  80

Asn Gln Ile Val Thr Ala Thr Gln Ser Asn Ile Cys Asp Glu Asp Ser
                 85                  90                  95

Ala Thr Glu Thr Cys Tyr Thr Tyr Asp Arg Asn Lys Cys Tyr Thr Ala
            100                 105                 110

Val Val Pro Leu Val Tyr Gly Gly Glu Thr Lys Met Val Glu Thr Ala
        115                 120                 125

Leu Thr Pro Asp Ala Cys Tyr Pro Asp
    130                 135
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<210> 2
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<212> PRT
<213> Mus sp.

<400> 2
Gln Asp Glu Asn Glu Arg Ile Val Val Asp Asn Lys Cys Lys Cys Ala
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Arg Ile Thr Ser Arg Ile Ile Pro Ser Ala Glu Asp Pro Ser Gln Asp
20 25 30

Ile Val Glu Arg Asn Val Arg Ile Ile Val Pro Leu Asn Ser Arg Glu
35 40 45

Asn Ile Ser Asp Pro Thr Ser Pro Met Arg Thr Lys Pro Val Tyr His
50 55 60

Leu Ser Asp Leu Cys Lys Lys Cys Asp Thr Thr Glu Val Glu Leu Glu
65 70 75 80

Asp Gln Val Val Thr Ala Ser Gln Ser Asn Ile Cys Asp Ser Asp Ala
85 90 95

Glu Thr Cys Tyr Thr Tyr Asp Arg Asn Lys Cys Tyr Thr Asn Arg Val
100 105 110

Lys Leu Ser Tyr Arg Gly Gln Thr Lys Met Val Glu Thr Ala Leu Thr
115 120 125

Pro Asp Ser Cys Tyr Pro Asp
130 135

<210> 3
<211> 137
<212> PRT
<213> Oryctolagus cuniculus

<400> 3
Asp Asp Glu Ala Thr Ile Leu Ala Asp Asn Lys Cys Met Cys Thr Arg
1 5 10 15

Val Thr Ser Arg Ile Ile Pro Ser Thr Glu Asp Pro Asn Glu Asp Ile
20 25 30

Val Glu Arg Asn Ile Arg Ile Val Val Pro Leu Asn Asn Arg Glu Asn
35 40 45

Ile Ser Asp Pro Thr Ser Pro Leu Arg Arg Asn Pro Val Tyr His Leu
50 55 60

Ser Asp Val Cys Lys Lys Cys Asp Pro Val Glu Val Glu Leu Glu Asp
65 70 75 80

Gln Val Val Thr Ala Thr Gln Ser Asn Ile Cys Asn Glu Asp Asp Gly
85 90 95

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Val Pro Glu Thr Cys Tyr Met Tyr Asp Arg Asn Lys Cys Tyr Thr Thr
            100                 105                 110

Met Val Pro Leu Arg Tyr His Gly Glu Thr Lys Met Val Gln Ala Ala
        115                 120                 125

Leu Thr Pro Asp Ser Cys Tyr Pro Asp
    130                 135


<210> 4
<211> 136
<212> PRT
<213> Bos sp.

<400> 4
Glu Asp Glu Ser Thr Val Leu Val Asp Asn Lys Cys Gln Cys Val Arg
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             20                  25                  30

Val Glu Arg Asn Ile Arg Ile Ile Val Pro Leu Asn Thr Arg Glu Asn
         35                  40                  45

Ile Ser Asp Pro Thr Ser Pro Leu Arg Thr Glu Pro Lys Tyr Asn Leu
     50                  55                  60

Ala Asn Leu Cys Lys Lys Cys Asp Pro Thr Glu Ile Glu Leu Asp Asn
 65                  70                  75                  80

Gln Val Phe Thr Ala Ser Gln Ser Asn Ile Cys Pro Asp Asp Asp Tyr
                 85                  90                  95

Ser Glu Thr Cys Tyr Thr Tyr Asp Arg Asn Lys Cys Tyr Thr Thr Leu
            100                 105                 110

Val Pro Ile Thr His Arg Gly Val Thr Arg Met Val Lys Ala Thr Leu
        115                 120                 125

Thr Pro Asp Ser Cys Tyr Pro Asp
    130                 135


<210> 5
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<213> Rana sp.

<220>
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<222> (47)
<223> Variable amino acid

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<222> (88)..(89)
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<220>
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<222> (91)
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1 5 10 15

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20 25 30

Glu Arg Asn Ile Gln Ile Thr Ile Pro Thr Ser Ser Arg Met Xaa Ile
35 40 45

Ser Asp Pro Tyr Ser Pro Leu Arg Thr Gln Pro Val Tyr Asn Leu Trp
50 55 60

Asp Ile Cys Gln Lys Cys Asp Pro Val Gln Leu Glu Ile Gly Gly Ile
65 70 75 80

Pro Val Leu Ala Ser Gln Pro Xaa Xaa Ser Xaa Pro Asp Asp Glu Cys
85 90 95

Tyr Thr Thr Glu Val Asn Phe Lys Lys Lys Val Pro Leu Thr Pro Asp
100 105 110

Ser Cys Tyr Glu Tyr Ser Glu
115

<210> 6
<211> 128
<212> PRT
<213> Lumbricus sp.

<400> 6
Asn Lys Cys Met Cys Thr Arg Val Thr Ala Arg Ile Arg Gly Thr Arg
1 5 10 15

Glu Asp Pro Asn Glu Asp Ile Val Glu Arg Tyr Ile Arg Ile Asn Val
20 25 30

Pro Leu Lys Asn Arg Gly Asn Ile Ser Asp Pro Thr Ser Pro Leu Arg
35 40 45

Asn Gln Pro Val Tyr His Leu Ser Pro Ser Cys Lys Lys Cys Asp Pro
50 55 60

Tyr Glu Asp Gly Val Val Thr Ala Thr Glu Thr Asn Ile Cys Tyr Pro
65 70 75 80

Asp Gln Gly Val Pro Gln Ser Cys Arg Asp Tyr Cys Pro Glu Leu Asp
85 90 95

Arg Asn Lys Cys Tyr Thr Val Leu Val Pro Pro Gly Tyr Thr Gly Glu
100 105 110

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Thr Lys Met Val Gln Asn Ala Leu Thr Pro Asp Ala Cys Tyr Pro Asp
        115                 120                 125


<210> 7
<211> 421
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<213> Homo sapiens

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<222> (1)..(414)

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<220>
<221> mat_peptide
<222> (7)..(414)

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Asp Gln Glu Asp Glu Arg Ile Val Leu Val Asp Asn Lys Cys Lys Cys
     -1   1               5                  10

gct cgt att act tct aga atc atc cgt agc tca gag gac cca aat gaa   96
Ala Arg Ile Thr Ser Arg Ile Ile Arg Ser Ser Glu Asp Pro Asn Glu
 15                  20                  25                  30

gat ata gtc gaa cgt aac atc cgt atc atc gtc cca ctg aat aac cgg   144
Asp Ile Val Glu Arg Asn Ile Arg Ile Ile Val Pro Leu Asn Asn Arg
                 35                  40                  45

gag aat atc tca gat cct aca agt ccg ttg cgc aca cgc ttc gta tac   192
Glu Asn Ile Ser Asp Pro Thr Ser Pro Leu Arg Thr Arg Phe Val Tyr
             50                  55                  60

cac ctg tca gat ctg tgt aag aag tgt gat cca aca gag gta gag ctg   240
His Leu Ser Asp Leu Cys Lys Lys Cys Asp Pro Thr Glu Val Glu Leu
         65                  70                  75

gac aat cag ata gtc act gcg act caa agc aac att tgc gat gag gac   288
Asp Asn Gln Ile Val Thr Ala Thr Gln Ser Asn Ile Cys Asp Glu Asp
     80                  85                  90

agc gct aca gaa acc tgc agc acc tac gat agg aac aaa tgc tac acg   336
Ser Ala Thr Glu Thr Cys Ser Thr Tyr Asp Arg Asn Lys Cys Tyr Thr
 95                  100                 105                 110

gcc gtg gtt ccg ctc gtg tat ggt gga gag aca aaa atg gtg gaa act   384
Ala Val Val Pro Leu Val Tyr Gly Gly Glu Thr Lys Met Val Glu Thr
                115                 120                 125

gcc ctt acg ccc gat gca tgc tat ccg gac tgaattc                  421
Ala Leu Thr Pro Asp Ala Cys Tyr Pro Asp
            130                 135
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<210> 8
<211> 215
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(213)

<400> 8
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gat cag aag tgc aag tgt gct cgt att act tct aga atc atc cgt agc   48
Asp Gln Lys Cys Lys Cys Ala Arg Ile Thr Ser Arg Ile Ile Arg Ser
  1               5                  10                  15

tca gag gac cca aat gaa gat ata gtc gaa cgt aac atc cgt atc atc   96
Ser Glu Asp Pro Asn Glu Asp Ile Val Glu Arg Asn Ile Arg Ile Ile
             20                  25                  30

gtc cca ctg aat aac cgg gag aat atc tca gat cct aca agt ccg ttg   144
Val Pro Leu Asn Asn Arg Glu Asn Ile Ser Asp Pro Thr Ser Pro Leu
         35                  40                  45

cgc aca cgc ttc gta tac cac ctg tca gat ctg tgt aag aag gat gag   192
Arg Thr Arg Phe Val Tyr His Leu Ser Asp Leu Cys Lys Lys Asp Glu
     50                  55                  60

gac agc gct aca gaa acc tgc tg                                   215
Asp Ser Ala Thr Glu Thr Cys
 65                  70
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<210> 9
<211> 140
<212> DNA
<213> Homo sapiens

<400> 9
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ctagaatcat ccgtagctca gaggacccaa atgaagatat agtcgaacgt aacatccgta 60
tcatcgtccc actgaataac cgggagaata tctcagatcc tacaagtccg ttgcgcacac 120
gcttcgtata ccacctgtca                                             140
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<210> 10
<211> 31
<212> DNA
<213> Homo sapiens

<400> 10
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gatcagaagt gcaagtgtgc tcgtattact t                                31
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<210> 11
<211> 44

<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(42)

<400> 11
gat ctg tgt aag aag gat gaa gat tcc gct aca gaa acc tgc tg 44
Asp Leu Cys Lys Lys Asp Glu Asp Ser Ala Thr Glu Thr Cys
1 5 10

<210> 12
<211> 109
<212> DNA
<213> Homo sapiens

<400> 12
gcacctacga taggaacaaa tgctacacgg ccgtggttcc gctcgtgtat ggtggagaga 60
caaaaatggt ggaaactgcc cttacgcccg atgcatgcta ccctgactg 109

<210> 13
<211> 286
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(279)

<400> 13
gat cag aag tgc aag tgt gct cgt att act tct aga atc atc cgt agc 48
Asp Gln Lys Cys Lys Cys Ala Arg Ile Thr Ser Arg Ile Ile Arg Ser
1 5 10 15

tca gag gac cca aat gaa gat ata gtc gaa cgt aac atc cgt atc atc 96
Ser Glu Asp Pro Asn Glu Asp Ile Val Glu Arg Asn Ile Arg Ile Ile
20 25 30

gtc cca ctg aat aac cgg gag aat atc tca gat cct aca agt ccg ttg 144
Val Pro Leu Asn Asn Arg Glu Asn Ile Ser Asp Pro Thr Ser Pro Leu
35 40 45

cgc aca cgc ttc gta tac cac ctg tca gat ctg tgt aag aag tgt gat 192
Arg Thr Arg Phe Val Tyr His Leu Ser Asp Leu Cys Lys Lys Cys Asp
50 55 60

cca aca gag gta gag ctg gac aat cag ata gtc act gcg act caa agc 240
Pro Thr Glu Val Glu Leu Asp Asn Gln Ile Val Thr Ala Thr Gln Ser
65 70 75 80

aac att tgc gat gag gac agc gct aca gaa acc tgc tac tgaattc 286
Asn Ile Cys Asp Glu Asp Ser Ala Thr Glu Thr Cys Tyr
85 90

<210> 14
<211> 105
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(105)

<400> 14
gat ctg tgt aag aag tgt gat cca aca gag gta gag ctg gac aat cag 48
Asp Leu Cys Lys Lys Cys Asp Pro Thr Glu Val Glu Leu Asp Asn Gln
1 5 10 15

ata gtc act gcg act caa agc aac att tgc gat gag gac agc gct aca 96
Ile Val Thr Ala Thr Gln Ser Asn Ile Cys Asp Glu Asp Ser Ala Thr
20 25 30

gaa acc tgc 105
Glu Thr Cys
35

<210> 15
<211> 61
<212> DNA
<213> Homo sapiens

<400> 15
gatcaggaag atgaacgtat tgttctggtt gacaacaagt gcaagtgtgc tcgtattact 60
t 61

<210> 16
<211> 198
<212> DNA
<213> Homo sapiens

<400> 16
gcgatgacga cgataaggcc caaacggaga cctgtactgt tgcgcctcgt gaacggcaaa 60
actgcggatt cccgggagta acaccctctc agtgcgctaa taaaggctgc tgttttgatg 120
acacggtacg gggcgttccg tggtgcttct accccaatac aattgacgtt ccgcctgaag 180
aagagtgcga gttttaag 198

<210> 17
<211> 138
<212> PRT
<213> Homo sapiens

<400> 17
Asp Gln Glu Asp Glu Arg Ile Val Leu Val Asp Asn Lys Cys Lys Cys
-1 1 5 10

Ala Arg Ile Thr Ser Arg Ile Ile Arg Ser Ser Glu Asp Pro Asn Glu
15 20 25 30

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Asp Ile Val Glu Arg Asn Ile Arg Ile Ile Val Pro Leu Asn Asn Arg
                35                  40                  45

Glu Asn Ile Ser Asp Pro Thr Ser Pro Leu Arg Thr Arg Phe Val Tyr
            50                  55                  60

His Leu Ser Asp Leu Cys Lys Lys Cys Asp Pro Thr Glu Val Glu Leu
        65                  70                  75

Asp Asn Gln Ile Val Thr Ala Thr Gln Ser Asn Ile Cys Asp Glu Asp
    80                  85                  90

Ser Ala Thr Glu Thr Cys Ser Thr Tyr Asp Arg Asn Lys Cys Tyr Thr
95                  100                 105                 110

Ala Val Val Pro Leu Val Tyr Gly Gly Glu Thr Lys Met Val Glu Thr
                115                 120                 125

Ala Leu Thr Pro Asp Ala Cys Tyr Pro Asp
            130                 135
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<210> 18
<211> 71
<212> PRT
<213> Homo sapiens

<400> 18

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Asp Gln Lys Cys Lys Cys Ala Arg Ile Thr Ser Arg Ile Ile Arg Ser
  1               5                  10                  15

Ser Glu Asp Pro Asn Glu Asp Ile Val Glu Arg Asn Ile Arg Ile Ile
            20                  25                  30

Val Pro Leu Asn Asn Arg Glu Asn Ile Ser Asp Pro Thr Ser Pro Leu
        35                  40                  45

Arg Thr Arg Phe Val Tyr His Leu Ser Asp Leu Cys Lys Lys Asp Glu
    50                  55                  60

Asp Ser Ala Thr Glu Thr Cys
65                  70
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<210> 19
<211> 49
<212> PRT
<213> Homo sapiens

<400> 19

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Ser Arg Ile Ile Arg Ser Ser Glu Asp Pro Asn Glu Asp Ile Val Glu
  1               5                  10                  15

Arg Asn Ile Arg Ile Ile Val Pro Leu Asn Asn Arg Glu Asn Ile Ser
            20                  25                  30
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Asp Pro Thr Ser Pro Leu Arg Thr Arg Phe Val Tyr His Leu Ser Asp
         35                  40                  45

Leu


<210> 20
<211> 12
<212> PRT
<213> Homo sapiens

<400> 20
Asp Gln Lys Cys Lys Cys Ala Arg Ile Thr Ser Arg
  1               5                  10


<210> 21
<211> 14
<212> PRT
<213> Homo sapiens

<400> 21
Asp Leu Cys Lys Lys Asp Glu Asp Ser Ala Thr Glu Thr Cys
  1               5                  10


<210> 22
<211> 36
<212> PRT
<213> Homo sapiens

<400> 22
Ser Thr Tyr Asp Arg Asn Lys Cys Tyr Thr Ala Val Val Pro Leu Val
  1               5                  10                  15

Tyr Gly Gly Glu Thr Lys Met Val Glu Thr Ala Leu Thr Pro Asp Ala
             20                  25                  30

Cys Tyr Pro Asp
         35


<210> 23
<211> 93
<212> PRT
<213> Homo sapiens

<400> 23
Asp Gln Lys Cys Lys Cys Ala Arg Ile Thr Ser Arg Ile Ile Arg Ser
  1               5                  10                  15

Ser Glu Asp Pro Asn Glu Asp Ile Val Glu Arg Asn Ile Arg Ile Ile
             20                  25                  30

Val Pro Leu Asn Asn Arg Glu Asn Ile Ser Asp Pro Thr Ser Pro Leu
         35                  40                  45
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Arg Thr Arg Phe Val Tyr His Leu Ser Asp Leu Cys Lys Lys Cys Asp
     50                  55                  60

Pro Thr Glu Val Glu Leu Asp Asn Gln Ile Val Thr Ala Thr Gln Ser
 65                  70                  75                  80

Asn Ile Cys Asp Glu Asp Ser Ala Thr Glu Thr Cys Tyr
                 85                  90
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<210> 24
<211> 35
<212> PRT
<213> Homo sapiens

<400> 24

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Asp Leu Cys Lys Lys Cys Asp Pro Thr Glu Val Glu Leu Asp Asn Gln
  1               5                  10                  15

Ile Val Thr Ala Thr Gln Ser Asn Ile Cys Asp Glu Asp Ser Ala Thr
             20                  25                  30

Glu Thr Cys
         35
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<210> 25
<211> 22
<212> PRT
<213> Homo sapiens

<400> 25

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Asp Gln Glu Asp Glu Arg Ile Val Leu Val Asp Asn Lys Cys Lys Cys
  1               5                  10                  15

Ala Arg Ile Thr Ser Arg
             20
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<210> 26
<211> 66
<212> PRT
<213> Homo sapiens

<400> 26

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Cys Ser Asp Asp Asp Asp Lys Ala Gln Thr Glu Thr Cys Thr Val Ala
  1               5                  10                  15

Pro Arg Glu Arg Gln Asn Cys Gly Phe Pro Gly Val Thr Pro Ser Gln
             20                  25                  30

Cys Ala Asn Lys Gly Cys Cys Phe Asp Asp Thr Val Arg Gly Val Pro
         35                  40                  45

Trp Cys Phe Tyr Pro Asn Thr Ile Asp Val Pro Pro Glu Glu Glu Cys
     50                  55                  60
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Glu Phe
65

<210> 27
<211> 421
<212> DNA
<213> Homo sapiens

<400> 27
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caccatacac gagcggaacc acggccgtgt agcatttgtt cctatcgtag gtgctgcagg 120
tttctgtagc gctgtcctca tcgcaaatgt tgctttgagt cgcagtgact atctgattgt 180
ccagctctac ctctgttgga tcacacttct tacacagatc tgacaggtgg tatacgaagc 240
gtgtgcgcaa cggacttgta ggatctgaga tattctcccg gttattcagt gggacgatga 300
tacggatgtt acgttcgact atatcttcat ttgggtcctc tgagctacgg atgattctag 360
aagtaatacg agcacacttg cacttgttgt caaccagaac aatacgttca tcttcctgat 420
c 421

<210> 28
<211> 219
<212> DNA
<213> Homo sapiens

<400> 28
aattcagcag gtttctgtag cgctgtcctc atccttctta cacagatctg acaggtggta 60
tacgaagcgt gtgcgcaacg gacttgtagg atctgagata ttctcccggt tattcagtgg 120
gacgatgata cggatgttac gttcgactat atcttcattt gggtcctctg agctacggat 180
gattctagaa gtaatacgag cacacttgca cttctgatc 219

<210> 29
<211> 140
<212> DNA
<213> Homo sapiens

<400> 29
gatctgacag gtggtatacg aagcgtgtgc gcaacggact tgtaggatct gagatattct 60
cccggttatt cagtgggacg atgatacgga tgttacgttc gactatatct tcatttgggt 120
cctctgagct acggatgatt 140

<210> 30
<211> 31
<212> DNA
<213> Homo sapiens

<400> 30
ctagaagtaa tacgagcaca cttgcacttc t 31

<210> 31
<211> 44
<212> DNA
<213> Homo sapiens

<400> 31
aattcagcag gtttctgtag cggactcttc atccttctta caca 44

<210> 32
<211> 117
<212> DNA
<213> Homo sapiens

<400> 32
aattcagtca gggtagcatg catcgggcgt aagggcagtt tccaccattt ttgtctctcc 60
accatacacg agcggaacca cggccgtgta gcatttgttc ctatcgtagg tgctgca 117

<210> 33
<211> 282
<212> DNA
<213> Homo sapiens

<400> 33
tcagtagcag gtttctgtag cgctgtcctc atcgcaaatg ttgctttgag tcgcagtgac 60
tatctgattg tccagctcta cctctgttgg atcacacttc ttacacagat ctgacaggtg 120
gtatacgaag cgtgtgcgca acggacttgt aggatctgag atattctccc ggttattcag 180
tgggacgatg atacggatgt tacgttcgac tatatcttca tttgggtcct ctgagctacg 240
gatgattcta gaagtaatac gagcacactt gcacttctga tc 282

<210> 34
<211> 105
<212> DNA
<213> Homo sapiens

<400> 34
gcaggtttct gtagcgctgt cctcatcgca aatgttgctt tgagtcgcag tgactatctg 60
attgtccagc tctacctctg ttggatcaca cttcttacac agatc 105

<210> 35
<211> 61
<212> DNA
<213> Homo sapiens

<400> 35
ctagaagtaa tacgagcaca cttgcacttg ttgtcaacca gaacaatacg ttcatcttcc 60
t 61

<210> 36
<211> 205
<212> DNA
<213> Homo sapiens

<400> 36
aattcttaaa actcgcactc ttcttcaggc ggaacgtcaa ttgtattggg gtagaagcac 60
cacggaagcc ccgtaccgtg tcatcaaaac agcagccttt attagcgcac tgagagggtg 120
ttactcccgg gaatccgcag ttttgccgtt cacgaggcgc aacagtacag gtctccgttt 180
gggccttatc gtcgtcatcg ctgca 205

<210> 37
<211> 13
<212> PRT
<213> Homo sapiens

<400> 37
Asp Gln Glu Asp Glu Arg Ile Val Leu Val Asp Asn Lys
1 5 10

<210> 38
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Illustrative peptide

<400> 38
Glu Asn Leu Tyr Phe Gln Ser
1 5

<210> 39
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Linker peptide

<400> 39
Lys Ala His Lys Val Asp Met Val Gln Tyr Thr
1 5 10

<210> 40
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Linker peptide

<400> 40
Val Gln Tyr Thr
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<210> 41
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Linker peptide

<400> 41
Glu Lys Ala Val Ala Asp
1 5

<210> 42
<211> 131
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(78)

<400> 42
atg aaa ttc tta gtc aac gtt gcc ctt ttt atg gtc gta tac att tct 48
Met Lys Phe Leu Val Asn Val Ala Leu Phe Met Val Val Tyr Ile Ser
1 5 10 15

tac atc tat gcg gat ccg agc tcg agt gct ctagatctgc agctggtacc 98
Tyr Ile Tyr Ala Asp Pro Ser Ser Ser Ala
20 25

atggaattcg aagcttggag tcgactctgc tga 131

<210> 43
<211> 26
<212> PRT
<213> Homo sapiens

<400> 43
Met Lys Phe Leu Val Asn Val Ala Leu Phe Met Val Val Tyr Ile Ser
1 5 10 15

Tyr Ile Tyr Ala Asp Pro Ser Ser Ser Ala
20 25

<210> 44
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Intracellular
targeting signal

<400> 44
Lys Asp Glu Leu
1

<210> 45
<211> 16
<212> PRT
<213> Homo sapiens

<400> 45
Ala Ile Gln Asp Pro Arg Leu Phe Ala Glu Glu Lys Ala Val Ala Asp
1 5 10 15

<210> 46
<211> 61
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 46
gatcaggaag atgaacgtat tgttctggtt gacaacaagt gcaagtgtgc tcgtattact 60
t 61

<210> 47
<211> 61
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 47
ctagaagtaa tacgagcaca cttgcacttg ttgtcaacca gaacaatacg ttcatcttcc 60
t 61

<210> 48
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 48
gatcagaagt gcaagtgtgc tcgtattact t 31

<210> 49
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 49
ctagaagtaa tacgagcaca cttgcacttc t 31

<210> 50
<211> 61
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 50
gatcaggaag atgaacgtat tgttctggtt gacaacaagt gcaagtccgc tcgtattact 60
t 61

<210> 51
<211> 61
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 51
ctagaagtaa tacgagcgga cttgcacttg ttgtcaacca gaacaatacg ttcatcttcc 60
t 61

<210> 52
<211> 61
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 52
gatcaggaag atgaacgtat tgttctggtt gacaacaagt gcaaggttgc tcgtattact 60
t 61

<210> 53
<211> 61
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 53
ctagaagtaa tacgagcaac cttgcacttg ttgtcaacca gaacaatacg ttcatcttcc 60
t 61

<210> 54
<211> 47
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 54
ctagaatcat ccgtagctca gaggacccaa atgaagatat agtcgaa 47

<210> 55
<211> 58
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 55
gatacggatg ttacgttcga ctatatcttc atttgggtcc tctgagctac ggatgatt 58

<210> 56
<211> 49
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 56
cgtaacatcc gtatcatcgt cccactgaat aaccgggaga atatctcag 49

<210> 57
<211> 49
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 57
cgtaacatcc gtatcatcgt cccactgaat aaccgggagc acatctcag 49

<210> 58
<211> 49
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 58
acggacttgt aggatctgag atattctccc ggttattcag tgggacgat 49

<210> 59
<211> 49
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 59
acggacttgt aggatctgag atgtgctccc ggttattcag tgggacgat 49

<210> 60
<211> 44
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 60
atcctacaag tccgttgcgc acacgcttcg tataccacct gtca 44

<210> 61
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 61
gatctgacag gtggtatacg aagcgtgtgc gca 33

<210> 62
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 62
gatctgtgta agaagtgtga tccaacagag gtagagctgg acaatcagat agtcactgca 60

<210> 63
<211> 44
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 63
gatctgtgta agaaggatga ggacagcgct acagaaacct gctg 44

<210> 64
<211> 44
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 64
aattcagcag gtttctgtag cgctgtcctc atccttctta caca 44

<210> 65
<211> 62
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 65
gatctgtgta agaaggatga ggacagcgct acagaaacct gctacgagaa ggatgagctg 60
tg 62

<210> 66
<211> 62
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 66
aattcacagc tcatccttcg cgtcgcaggt ttctgtagcg ctgtcctcat ccttcttaca 60
ca 62

<210> 67
<211> 59

<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 67
gatctgtgta agaagtctga tatcgatgaa gattccgcta cagaaacctg cagcacatg 59

<210> 68
<211> 59
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 68
aattcatgtg ctgcaggttt ctgtagcgga atcttcatcg atatcagact tcttacaca 59

<210> 69
<211> 64
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 69
gatctgtcta agaagtctga tatcgatgaa gattacagat tcttcagact atagctactt 60
ctaa 64

<210> 70
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 70
aatcttcatc gatatcagac ttcttagaca 30

<210> 71
<211> 64
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

oligonucleotide

<400> 71
gatctggtta agaagtctga tatcgatgaa gattaccaat tcttcagact atagctactt 60
ctaa 64

<210> 72
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 72
aatcttcatc gatatcagac ttcttaacca 30

<210> 73
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 73
attgtccagc tctacctctg ttggatcaca cttcttacac a 41

<210> 74
<211> 46
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 74
actcaaagca acatttgcga tgaggacagc gctacagaaa cctgca 46

<210> 75
<211> 57
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 75
ggtttctgta gcgctctgct catcgcaaat gttgctttga gtcgcagtga ctatctg 57

<210> 76
<211> 59
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 76
gcacctacga taggaacaaa tgctacacgg ccgtggttcc gctcgtgtat ggtggagag 59

<210> 77
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 77
gagcggaacc acggccgtgt agcatttgtt cctatcgtag gtgctgca 48

<210> 78
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 78
acaaaaatgg tggaaactgc ccttacgccc gatgcatgct atccggactg 50

<210> 79
<211> 69
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 79
aattcagtcc ggatagcatg catcgggcgt aagggcagtt tccaccattt ttgtctctcc 60
accatacac 69

<210> 80
<211> 62
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 80
acaaaaatgg tggaaactgc ccttacgccc gatgcatgct atccggacaa ggatgaattg 60
tg 62

<210> 81
<211> 81
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 81
aattcacaat tcatccttgt ccggatagca tgcatcgggc gtaagggcag tttccaccat 60
ttttgtctct ccaccataca c 81

<210> 82
<211> 88
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 82
gatcaggtcg ctgccatcca agacccgagg ctgttcgccg aagagaaggc cgtcgctgac 60
tccaagtgca agtgtgctcg tattactt 88

<210> 83
<211> 88
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 83
ctagaagtaa tacgagcaca cttgcacttg gagtcagcga cggccttctc ttcggcgaac 60
agcctcgggt cttggatggc agcgacct 88

<210> 84
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
targeting peptide

<400> 84
Cys Ala Ala Pro Lys Lys Lys Arg Lys Val
1 5 10

<210> 85
<211> 19
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
targeting peptide

<400> 85
Cys Ala Ala Lys Arg Pro Ala Ala Ile Lys Lys Ala Gly Gln Ala Lys
1 5 10 15

Lys Lys Lys

<210> 86
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Intracellular
targeting signal

<400> 86
His Asp Glu Leu
1

<210> 87
<211> 77
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 87
gcgatgacga cgataaggcc caaacggaga cctgtactgt tgcgcctcgt gaacggcaaa 60
actgcggatt cccggga 77

<210> 88
<211> 66
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 88
gttttgccgt tcacgaggcg caacagtaca ggtctccgtt tgggccttat cgtcgtcatc 60
gctgca 66

<210> 89
<211> 72
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 89
gtaacaccct ctcagtgcgc taataaaggc tgctgttttg atgacacggt acggggcgtt 60
ccgtggtgct tc 72

<210> 90
<211> 72
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 90
gccccgtacc gtgtcatcaa aacagcagcc tttattagcg cactgagagg gtgttactcc 60
cgggaatccg ca 72

<210> 91
<211> 49
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 91
taccccaata caattgacgt tccgcctgaa gaagagtgcg agttttaag 49

<210> 92
<211> 68
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

oligonucleotide

<400> 92
aattcttaaa actcgcactc ttcttcaggc ggcaagtcaa ttgtattggg gtagaagcac 60
cacggaac 68

<210> 93
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Linker peptide

<400> 93
Val Ala Val Gln Ser Ala Gly Thr Pro Ala Ser Gly Ser
1 5 10